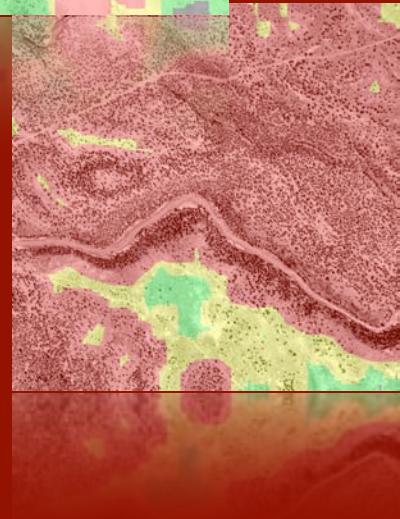
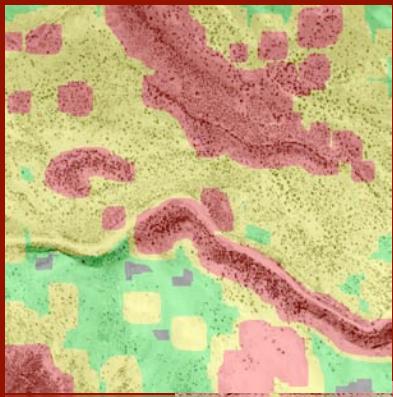




# SAGE STEPPE ECOSYSTEM RESTORATION STRATEGY

FINAL  
ENVIRONMENTAL  
IMPACT  
STATEMENT



Modoc National Forest  
Alturas Field Office BLM  
Modoc County



April 2008  
RS-MB-161





United States  
Department of  
Agriculture

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United States  
Department  
of Interior



April, 2008

Dear Reader:

We are pleased to announce the availability of the Sage Steppe Ecosystem Restoration Strategy Final Environmental Impact Statement (FEIS). This document was completed by the USDA-Forest Service, USDI-Bureau of Land Management and Modoc County, California as a Cooperating Agency. The document was prepared using public comments received during the scoping phase and the Draft Environmental Impact Statement (DEIS) comment period of this planning effort.

The geographic analysis area contains approximately 6.5 million acres, including lands managed by the Modoc National Forest, the Klamath National Forest, the Shasta-Trinity National Forest, and the Alturas, Surprise and Eagle Lake Field Offices of the Bureau of Land Management. The overall intent of this planning effort is to develop a strategy for the restoration of sage steppe habitats at a programmatic, landscape scale.

This FEIS has been developed in accordance with the National Environmental Policy Act of 1969, the Federal Land Policy and Management Act of 1976, and the laws and regulations specific to USDA-Forest Service and USDI-Bureau of Land Management. The FEIS incorporated public comments received from the Sage Steppe Ecosystem Restoration Strategy DEIS that was released on August 31, 2007. These public comments resulted in the addition of a new alternative, Alternative J, which is the Forest Service's and Bureau of Land Management's Preferred Alternative.

As this is a joint planning effort between the Bureau of Land Management and Forest Service, administrative procedures related to the issuance of the FEIS vary by agency. Details are listed below.

#### ***Bureau of Land Management:***

This FEIS has been filed with the Environmental Protection Agency and is available on the Bureau of Land Management's (BLM's) Alturas, Surprise, or Eagle Lake Field Office websites (<http://www.blm.gov/ca>) or by mail upon request. BLM will issue a Record of Decision (ROD) no sooner than 30 days following publication of the FEIS Notice of Availability in the *Federal Register*.

#### ***Forest Service:***

The FEIS is available on the Modoc National Forest website ([www.fs.fed.us/r5/modoc/projects/sagebrush-restoration-web/juniperstrategy.shtml](http://www.fs.fed.us/r5/modoc/projects/sagebrush-restoration-web/juniperstrategy.shtml)). It has not yet been determined whether the Forest Service will issue a Record of Decision (ROD) for this FEIS, or incorporate the analysis into its upcoming Forest Plan Revision. If a ROD is issued, Forest Service regulations provide for a 45-day appeal period, subsequent to the issuance of the ROD. The ROD would specify the proper procedures for filing an appeal. The ROD would be posted on the website above and sent to those individuals and groups who request a copy.



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### ***Timing for Decisions***

It is anticipated that the Bureau of Land Management will issue a ROD once consultation with the U.S. Fish and Wildlife Service has been completed, but no sooner than 30 days following the publication of the Notice of Availability for this FEIS in the *Federal Register*. Consultation with the U.S. Fish and Wildlife Service is expected to be complete within 60 days after issuance of this FEIS. If the Forest Service issues a ROD, it would likely be issued at about the same time as the Bureau of Land Management.

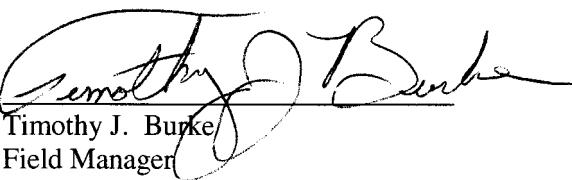
**FOR FURTHER INFORMATION:** For further information, or to request a copy of the FEIS or Records of Decision, when issued, contact Rob Jeffers, Project Lead, U.S. Forest Service, 800 West 12<sup>th</sup> Street, Alturas, CA 96101, or email your request to [ljwilliams@fs.fed.us](mailto:ljwilliams@fs.fed.us).

**SUPPLEMENTARY INFORMATION:** Copies of the FEIS documents for the Sage Steppe Ecosystem Restoration Strategy have been sent to affected federal, state, and local government agencies and to interested parties. Copies of the FEIS are available for public inspection at the BLM Alturas Field Office, 708 West 12<sup>th</sup> Street, Alturas, CA, and the Modoc National Forest, Supervisor's Office, 800 West 12<sup>th</sup> Street, Alturas, CA. Interested persons may also review the FEIS on the Forest Service and Bureau of Land Management websites listed above.

The Forest Service and BLM would like to thank our Cooperating Agency partner, Modoc County. County staff and the Modoc Land Use Committee played an integral role in completing this document. We also extend thanks to those individuals and organizations that have provided extensive information and many excellent ideas that have been considered during this process.

Sincerely,

  
Stanley G. Sylva  
Forest Supervisor  
Modoc National Forest

  
Timothy J. Burke  
Field Manager  
Alturas Field Office

# Sage Steppe Ecosystem Restoration Strategy

## Final

### Environmental Impact Statement

*Modoc, Lassen, Shasta and Siskiyou counties, California and Washoe County, Nevada*

**Lead Agency:** USDA Forest Service

**Cooperating Agencies:** USDI Bureau of Land Management  
Modoc County, California

**Responsible Official:** Stanley Silva, Forest Supervisor  
Modoc National Forest  
800 West 12th Street  
Alturas CA 96101

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Alturas CA 96101  
530-233-8816

#### **Abstract:**

The Modoc National Forest, Bureau of Land Management and partner agencies including Modoc County, California, are cooperating in developing a management strategy and environmental impact statement. The Sage Steppe Ecosystem Restoration Strategy focuses on the restoration of sage steppe ecosystems that have come to be dominated by juniper, as the density of Western juniper has increased over the landscape. The management strategy will broadly identify appropriate restoration methodologies by ecological conditions; provide guidelines for design and implementation of effective restoration treatments for restoration areas to be analyzed site specifically over a 50-year horizon.

The Forest Service and BLM developed five alternatives to the Proposed Action, including the Current Management alternative. These alternatives were developed in response to issues raised by the public, relating to the Proposed Action. The four action alternatives include one that proceeds slower, one that changes the mix of treatments, one that proceeds faster and changes the mix of treatments and one that proceeds slower and changes the mix of treatments.

## **Summary**

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The U.S. Department of Agriculture's Modoc National Forest (FS) and U.S. Department of the Interior's Bureau of Land Management, Alturas Field Office (BLM); and Cooperating Agency, Modoc County, California, are developing a Restoration Strategy and associated environmental impact statement (EIS). The Sage Steppe Ecosystem Restoration Strategy EIS focuses on the restoration of sage steppe ecosystems that have come to be dominated by juniper, as the density of Western juniper has increased over the landscape. The Restoration Strategy will broadly identify appropriate restoration methodologies by ecological conditions; and provide guidelines for design and implementation of effective restoration treatments for restoration areas to be analyzed site specifically over a 50-year horizon.

The Analysis Area covers approximately 6.5 million acres of public and private land. Within the Analysis Area, there is an identified Focus Area that contains the sage steppe ecosystem and includes all areas that are proposed for restoration treatment. The Focus Area is more than 4 million acres and contains a large percentage of BLM and private lands. Restoration projects would occur on National Forest lands and public lands administered by the BLM in parts of Modoc, Lassen, Shasta and Siskiyou Counties, California and in Washoe County, Nevada. Lands other than FS and BLM administered lands are taken in consideration in this analysis to provide contextual information to guide decision-making by the two agencies.

## **Purpose and Need for Action**

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The purpose of this Restoration Strategy is to adopt an approach for juniper management on National Forest System and Bureau of Land Management lands encompassed by the 6.5 million acre Analysis Area, in order to restore the sage steppe ecosystem and associated vegetative communities to desired habitat conditions reflecting ecological processes that existed pre-European settlement. This action is needed because of the loss of the sagebrush ecosystem across the landscape as the density of juniper has altered many sites from sagebrush steppe to juniper woodlands dominated. The cause of this ecological shift is predominately due to anthropogenic changes, and the associated loss of vegetative, habitat, and hydrologic values. The purpose of this Restoration Strategy is to restore sage steppe ecosystems that have become dominated by Western juniper woodlands due to human causes.

More specifically the purpose of this Restoration Strategy is to restore sage steppe ecosystem processes and vegetation conditions that resemble historic mosaics, so that historic fire return intervals in sage steppe ecosystems can be sustained. Additional objectives include; improving watershed function and condition, restoring biodiversity and productivity, managing fuels to conform to the National Fire Plan requirements, and implementing, where appropriate, national renewable energy direction. This Restoration Strategy would restore habitat for sagebrush obligate species, improve hydrologic conditions and enhance the forage base for wildlife and domestic animals.

Miller *et al.* (2008) concludes that “*The lack of active management will potentially result in the continued decline of historic sagebrush communities, structural diversity, understory species, herbaceous production, habitat for sagebrush obligates, and landscape heterogeneity. As a greater proportion of the landscape shifts towards Phase III the risk of larger, intensive wildfires and conversion to annual exotics will increase, as will the cost of treatment, and the potential for desirable outcomes will decrease. Infilling by younger trees also increases the risk for the loss of presettlement trees due to increased fire severity and size resulting from the increase in the abundance and landscape level continuity of fuels.*”

## **Proposed Action** ---

Federal managers of the FS and the BLM propose to adopt a long-range Restoration Strategy to restore the sage-steppe ecosystem and related species habitat. The Proposed Action is to create an integrated, landscape-scale management Restoration Strategy that restores the sage steppe ecosystem across a 6.5 million acre Analysis Area. This Restoration Strategy focuses on the conditions of the sage steppe ecosystem that is targeted for restoration. Within the Analysis Area, there is an identified Focus Area that contains the sage steppe ecosystem and includes all areas that are proposed for restoration treatment. Primary methods to be employed for restoration include fire use, mechanical restoration and hand restoration. Using this integrated approach, the federal land managers propose to treat up to 30,000 acres per year across FS and BLM lands. The mix of restoration methods would be about 19 percent of the area restored by mechanical methods; 78 percent using fire; and three percent using hand treatments. This Restoration Strategy is a programmatic, landscape-scale approach to restoration. The treatments would require site-specific environmental analysis to meet the objectives of the proposed Restoration Strategy and obtain federal agency approval prior to implementation.

This EIS may provide the basis for amending or revising FS and BLM respective land management plans, as appropriate. The Modoc National Forest anticipates revising its Forest Land and Resource Management Plan (USDA Forest Service 1991a) in the next several years. The analysis from this EIS will be incorporated into the revision process. The Lassen, Shasta Trinity and Klamath National Forests may use the information contained in this EIS as appropriate. The new Resource Management Plans for the Alturas, Surprise and Eagle Lake Field Offices of the Bureau of Land Management have been designed to accommodate decisions arising from the Restoration Strategy.

## **Background** ---

The Sage Steppe Ecosystem Restoration effort began in a series of informal discussions between the Alturas Field Office of the BLM, the Modoc National Forest, and the North Cal-Neva Resource Conservation and Development Council that focused on wildlife habitat loss, accelerating juniper density, soil surface degradation, and forage loss. Resource Concepts, Inc. an engineering and environmental consulting firm from Carson City, Nevada was contracted to

develop a concept paper detailing the agencies' concerns, and presenting a strategic approach for future management. The product was entitled, "Western Juniper Management Strategy and Planning Proposal Analysis", and was submitted to the agencies on August 7, 2001.

This concept paper provided the foundation for numerous informal discussions with a wide array of public and private entities, as the problem statement and the strategic approach were refined and developed. Informal discussions were held with approximately 32 agencies, organizations, tribal entities, legislators, and individuals from 2000 to 2004.

Additionally, agency representatives specifically discussed the sage steppe/juniper initiative on 18 separate occasions with the Modoc County Resource Advisory Committee, between December 1, 2001 and August 2, 2004. Agency representatives also discussed the initiative with the BLM's Northeast California/Northwest Nevada Resource Advisory Council on 13 occasions between June 2000 and August 2004. Further, the agencies met with the Modoc-Washoe Experimental Stewardship Steering Committee four times between February of 2003 and June of 2005; and the Modoc County Land Use Committee 17 times from August of 2002 to August of 2005.

In a final effort to refine and further develop the agencies proposed Restoration Strategy prior to distribution of the Notice of Intent, which marked the beginning of the formal scoping period, eight public meetings were held throughout the Analysis Area to solicit public comments.

The Notice of Availability (NOI) of the Draft EIS was published in the Federal Register on August 31, 2007. During the comment period nine public meetings, presentations and field trips were offered throughout the Analysis Area. A total of 40 people attended the public meetings. In addition several people attended the two field trips.

The DEIS public comment period ended on October 15<sup>th</sup>, 2007. During that 45-day comment period 23 comment letters were received. These comment letters were analyzed using the same method that was used on the scoping comments. Three comment letters were received well after the end of the comment period and therefore were not analyzed. However, in reviewing those letters, it was concluded that the issues raised are substantially encompassed within comments submitted during the comment period and that the response to comments addresses their issues. Responses to all substantive comments received during the comment period are presented in Appendix A.

Based upon public comments on the DEIS an additional alternative (Alternative J) was added to the Final EIS. Alternative J has been identified by the agencies as the Preferred Alternative.

## **Issues**

Public scoping generated some concerns about the Sage Steppe Ecosystem Management Strategy. Thirteen issues were developed from public scoping and are described below.

*Issue 1 – Restoration Rate*

**Issue Statement:** The restoration rate in the Proposed Action will not keep up with juniper expansion to fully meet the purpose and need. The restoration treatments in the Proposed Action would restore 25,000 to 30,000 acres per year. This rate could not restore the existing sage steppe acres that have been encroached upon and keep up with new juniper expansion in a foreseeable time frame.

*Issue 2 – Permanent Roads*

**Issue Statement:** New permanent roads created for restoration treatment activities may cause negative environmental effects such as the spread of noxious weeds, increased OHV use of the area, increased soil erosion, negative impacts to wildlife habitat, and other associated management problems.

*Issue 3 – Uncertain Results*

**Issue Statement:** Treatments could result in further degradation of sage steppe biodiversity, and not restoration. There is uncertainty as to whether the most degraded sage steppe areas will respond to treatment. Uncertainty must be addressed through adequate monitoring and adjustment through time.

*Issue 4 – Livestock Grazing Impacts on Restoration Effectiveness*

**Issue Statement:** Improper timing and intensity of livestock grazing can reduce plant vigor, create bare ground leading to erosion of the top soil, prevent historic fire return intervals due to removal of fine fuels, and retard restoration response after mechanical or fire treatments. The Proposed Action would not be effective in restoring the sage steppe ecosystem if it does not address the impacts of livestock grazing.

*Issue 5 – Impacts on Livestock Industry*

**Issue Statement:** Implementation of 25,000 to 30,000 acres of restoration per year with anticipated two years of rest following mechanical or fire treatments and a year of rest prior to prescribed fire treatments may have an adverse economic impact on the local livestock industry. Most suitable grazing land in the Analysis Area is being utilized and therefore livestock have little alternative range to use during rest periods. The project may cause ranchers to reduce their herds or adjust their operations, and result in substantial economic impacts on the local economy.

*Issue 6 – Noxious Weeds and Non-Native Invasive Species*

**Issue Statement:** Arid landscapes are very vulnerable to invasion by noxious weeds and non-native invasive species following mechanical and prescribed fire treatments. The Proposed Action would increase the risk of this invasion in the Analysis Area.

*Issue 7 – Old Growth Juniper*

**Issue Statement:** Old growth juniper trees exist in various locations throughout the Focus Area. These trees are a natural component and play an important role in the sage steppe ecosystem and should not be killed due to restoration treatments.

*Issue 8 – Juniper Wildlife Habitat*

**Issue Statement:** Some wildlife species such as migratory birds rely on juniper stringers and clumps. If restoration treatments fragment this habitat it would have an impact on these wildlife species.

*Issue 9 – Short-term Impacts to Sage Obligate Species*

**Issue Statement:** There would be short-term impacts on sage obligate species habitat that could outweigh long-term benefits. This may be particularly true with the widespread use of fire that could reduce the extent of sagebrush habitat in the short term.

*Issue 10 – Soil Productivity and Surface Hydrologic Condition*

**Issue Statement:** The proposed restoration treatments could result in the reduction of vegetative cover in the short term, and result in increased soil erosion, increased sediment delivery to streams and/or soil nutrient loss. Not restoring this ecosystem could also result in increased soil erosion, increased sediment delivery to streams, and/or soil nutrient loss.

*Issue 11 – Native American Cultural Resources and Activities*

**Issue Statement:** The short and/or long term vegetative changes created by restoration treatments may have effects on the integrity of Native American cultural resources. These vegetation changes may also have effects on Native American cultural practices and the gathering of traditional foods, such as the loss of habitat for culturally important wildlife and plant species. Native Americans also expressed concern that prescribed fire at a large scale may have adverse impacts to air quality.

*Issue 12 – Prescribed Fire and Wildland Fire Use Implementation*

**Issue Statement:** Burning on this scale may not be practical, particularly when environmental consequences and tactical reasonableness, such as smoke emissions and burn windows, are fully weighed.

*Issue 13 – Local Economics*

**Issue Statement:** The Proposed Action, with its heavy emphasis on prescribed fire and wildland fire use, has not considered treatment costs and local socio-economics, including opportunities for employment.

## **Alternatives**

These issues led the agency to develop alternatives to the Proposed Action including:

*Alternative A - Current Management*

Alternative A, the Current Management alternative, would use existing plans to continue to guide management of the Analysis Area. Although there is no explicit BLM or FS policy regarding rest following treatment, it is generally required under Current Management practices. The current rate of restoration would be expected to continue for the next 40-50 years at approximately 5,000 acres per year of restoration within the Focus Area. The mix of restoration methods would be

similar to the Proposed Action, with about 19 percent of the area restored by mechanical methods; 78 percent using fire; and three percent using hand treatments. A total of 250,000 acres would be restored over 50 years under this alternative.

#### *Alternative C*

**Theme** – This alternative would proceed more slowly and cautiously with restoration activity than the Proposed Action. A Monitoring and Adjustment Approach would be used to test the effectiveness of different restoration methods and associated vegetative response. Based upon this monitoring, the pace and methods of restoration would be adjusted as appropriate before increasing the restoration rate to match the Proposed Action.

This alternative would restore about 15,000 to 19,000 acres annually for the first two decades, fewer than Alternative B (Proposed Action) because some of the Focus Area within critical sage-grouse, mule deer and pronghorn antelope habitat would be deferred until the third decade and later. The restoration methods and Focus Area would be the same as those for the Proposed Action. The majority of restoration treatments would take place on the Modoc National Forest, and Alturas, Eagle Lake and Surprise Field Offices. A relatively small area of restoration would take place on the Klamath National Forest and very small amounts of restoration would take place on the Shasta-Trinity National Forest and Redding Field Office.

For the first decade, the annual restoration rate would be approximately 50 percent of each restoration method in the Proposed Action. Total area of restoration would be approximately 15,000 acres per year for the first decade. For the second decade, it is assumed that the restoration rate for mechanical methods would equal the Proposed Action, but that the fire use rate would remain at half. The second decade restoration rate would be approximately 19,000 acres per year. Beyond the second decade, the rate of restoration would equal that of the Proposed Action of approximately 30,000 acres per year. This buildup in restoration rates assumes that monitoring has validated implementation of the restoration methods. In 40 years fewer acres would be restored as compared to the Proposed Action. An additional 10 years, or 50 years in total, would be required to complete restoration in all of the Focus Area under this alternative. It is expected that this approach would create greater certainty regarding the results over time. Alternative C would defer a more aggressive restoration rate until such a time as monitoring validates the increased rate.

#### *Alternative D*

**Theme** – Alternative D emphasizes restoration methods to retain the sagebrush component, have lower risks of invasive species spread due to less area restored with fire, and potentially require less agency resources to implement. This alternative reduces the amount of fire use (from 78 percent to 56 percent) and increases the amount of mechanical restoration (from 19 percent to 41 percent) as compared to the Proposed Action. The majority of restoration treatments would take place on the Modoc National Forest, and Alturas, Eagle Lake and Surprise Field Offices. A relatively small area of restoration would take place on the Klamath National Forest and very

small amounts of restoration would take place on the Shasta-Trinity National Forest and Redding Field Office.

There are a number of Significant Issues, which include concerns that fire use would not achieve resource and restoration objectives with acceptable results. This alternative reduces the area of fire use and increases the area of mechanical restoration as compared to the Proposed Action. Alternative D restores 28,000 acres per year for the first two decades. The restoration rate then increases to 34,000 acres per year for the third and fourth decades. The differences in the restoration rates is a result of deferring critical sage-grouse, mule deer and pronghorn antelope habitat from restoration with fire use for the first two decades. Alternative D would take approximately 40 years to restore all of the Focus Area. The overall extent of restoration of the Focus Area in the Proposed Action would be similar for this alternative. However, some of the restoration areas that would be burned in the Proposed Action would be mechanically restored in this alternative.

This alternative would also incorporate the Monitoring and Adjustment Approach described in Alternative B. It would not, however, include the reduction in restoration rate specified in Alternative C.

#### *Alternative E*

**Theme** – Alternative E differs from the Proposed Action by increasing the restoration rate in order to more fully respond to the purpose and need. This alternative would target mechanical treatment at nearly double the restoration rate of the Proposed Action. Alternative E, similar to Alternative D, would emphasize mechanical restoration methods and less extensive use of fire treatments. Mechanical restoration would retain the sagebrush component. This would have a lower risk of invasive species spread, and would potentially require fewer agency resources to implement.

Overall, this alternative would increase the annual restoration rate over all other alternatives. This alternative would reduce the area of fire use for restoration (from 78 percent to 56 percent) and increase the amount of mechanical restoration (from 19 percent to 41 percent) compared to the Proposed Action. The majority of restoration treatments would take place on the Modoc National Forest, and Alturas, Eagle Lake and Surprise Field Offices. A relatively small area of restoration would take place on the Klamath National Forest and very small amounts of restoration would take place on the Shasta-Trinity National Forest and Redding Field Office.

This alternative would restore 37,000 acres per year for the first two decades, then the restoration rate would increase to approximately 42,000 acres per year for the third decade. The mechanical restoration would be completed by the end of the third decade. About 24,000 acres per year of fire use restoration would continue for three years into the fourth decade. The primary reason that fire use continues after the mechanical restoration would be completed is to decrease the potential for air quality impacts. The other differences in the restoration rates is a result of deferring critical sage-grouse, mule deer and pronghorn antelope habitat from restoration with

fire use for the first two decades. Alternative E would take approximately 33 years to restore all of the Focus Area.

This alternative would also incorporate the Monitoring and Adjustment Approach described in Alternative B. It is anticipated that this monitoring will validate the aggressive restoration rate.

*Alternative J (Preferred Alternative)*

**Theme** – Alternative J (Preferred Alternative) would proceed more slowly and cautiously with restoration activity than the Proposed Action, similar to Alternative C. As in all alternatives, a Monitoring and Adjustment Approach would be used to test the effectiveness of different restoration methods and associated vegetative response. Based upon this monitoring, the pace and methods of restoration would be adjusted as appropriate before increasing the restoration rate to match Alternative D. Alternative J (Preferred Alternative) would use restoration methods to retain the sagebrush component, have lower risks of invasive species spread due to less area restored with fire, and potentially require less agency resources to implement, similar to Alternative D.

Similar to Alternative D and E, this alternative reduces the area of fire use and increases the area of mechanical restoration as compared to the Proposed Action. This shift in restoration treatments addresses a number of Significant Issues, which include concerns that fire use would not achieve resource and restoration objectives with acceptable results.

Alternative J (Preferred Alternative) would restore about 14,000 to 21,000 acres annually for the first two decades, fewer than Alternative B (Proposed Action) because some of the Focus Area within critical sage-grouse, mule deer and pronghorn antelope habitat would be deferred until the third and fourth decades. The restoration methods and Focus Area would be the same as those for Alternatives D and E.

The approach to restoration in Alternative J (Preferred Alternative) would include systematic monitoring of results. Based upon the monitoring, adjustments would be made to the restoration methods, and future restoration projects would reflect those adjustments.

For the first decade, the annual restoration rate would be approximately 50 percent of each restoration method in Alternative D. Total area of restoration would be approximately 14,000 acres per year for the first decade. For the second decade, it is assumed that the restoration rate for mechanical methods would equal Alternative D, but that the fire use rate would remain at half. The second decade restoration rate would be approximately 21,000 acres per year. Beyond the second decade, the rate of restoration would equal that of Alternative D of approximately 34,000 acres per year. This buildup in restoration rates assumes that monitoring has validated implementation of the restoration methods. In 40 years fewer acres would be restored as compared to the Proposed Action and Alternative D. An additional seven years, or 47 years in total, would be required to complete restoration in all of the Focus Area under Alternative J (Preferred Alternative). It is expected that this approach would create greater certainty regarding the results over time. Alternative J (Preferred Alternative) would defer a more aggressive restoration rate until such a time as monitoring validates the increased rate.

Treatment types and acres of restoration by alternative are shown in Table 1.

Table 1. Acres of FS and BLM Restoration Treatments by Alternative

	Alternative A	Alternative B	Alternative C	Alternatives D, E and J
<b>Mechanical Restoration<sup>1</sup></b>				
Dense Juniper Areas	32,500 acres	163,700 acres	163,700 acres	163,700 acres
Less Dense Juniper Areas	0 acres	0 acres	0 acres	272,600 acres
Isolated Juniper Areas	16,000 acres	79,000 acres	79,000 acres	79,000 acres
Total Mechanical	48,500 acres	242,700 acres	242,700 acres	515,300 acres
<b>Fire Use<sup>2</sup></b>				
Inside Wildland Urban Interface (WUI)	16,000 acres	80,100 acres	59,200 acres	34,200 acres
Inside WUI deferred	0 acres	0 acres	20,900 acres	13,700 acres
Outside WUI	177,500 acres	891,600 acres	749,100 acres	540,400 acres
Outside WUI deferred	0 acres	0 acres	142,500 acres	108,900 acres
Total Fire Use	193,500 acres	971,700 acres	971,700 acres	697,200 acres
<b>Hand Treatment<sup>3</sup></b>	8,000 acres	39,800 acres	39,800 acres	39,800 acres
<b>Total Treatment Acres</b>	250,000 acres	1,254,200 acres	1,254,200 acres	1,252,300 acres

<sup>1</sup>Mechanical Restoration areas have the following characteristics:

≤30% slope

Dense juniper areas have >20% canopy closure and are ≤1 mile from existing roads

Less dense juniper areas have 6-20% canopy closure and are ≤1 mile from existing roads

Isolated juniper areas have >20% canopy closure and are greater than 1 mile from existing roads

<sup>2</sup>Fire Use Restoration areas have the following characteristics:

≤20% juniper canopy closure

WUI – Wildland Urban Interface areas

Deferred – special wildlife areas that are deferred from fire use for the first 20 years

<sup>3</sup>Hand Treatments areas have the following characteristics:

>20% juniper canopy closure and >30% slope

Hand treatments are associated with resources such as;

Within 100 feet of seasonal drainages

Cultural/Archaeological sites if compatible with values present

Sensitive habitats

## Decision Framework

The lead agencies are the FS, Modoc National Forest and the BLM, Alturas Field Office. Modoc County is a cooperating agency. Partner agencies include Siskiyou and Lassen Counties, California. The responsible officials for this planning effort are the Modoc National Forest,

Forest Supervisor and Alturas Field Office, Field Manager. The responsible officials will use the information from this EIS to guide their decision-making and to coordinate treatment projects across ownerships, as appropriate. As appropriate, this information may also be used to amend, revise, or inform their resource management plans. If utilized to amend the Modoc National Forest Land and Resource Management Plan, this would be a non-significant plan amendment (USDA Forest Service 2008a). Decisions related to this EIS are programmatic and strategic in nature and do not require implementation of projects. Specific decisions to be made, in addition to adoption of a Sage Steppe Ecosystem Restoration Strategy, may include:

#### *Bureau of Land Management*

The BLM may amend its respective Resource Management Plans to include components developed in this analysis, including but not limited to:

- Desired Future Conditions
- Design Standards to be incorporated
- Monitoring and Adjustment Approach

#### *US Forest Service*

Information from the EIS may be utilized to amend or revise the Modoc National Forest Land and Resource Management Plan, including some or all of the following:

- Desired Future Conditions
- Design Standards to be incorporated
- Monitoring and Adjustment Approach

### **Major Conclusions**

The major conclusions are the results of the environmental consequences. These are summarized in Table 2, which displays the key results of the analysis.

Table 2. Summary Comparisons of Resource Effects by Alternative

Environmental Component	Evaluation Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative J
Reduction in fire hazard level	Focus Area moved towards Condition Class I	5%	24%	24%	17%	17%	17%
Short term effect on forage base for domesticated animals	Trend in range quality	Minor changes	Reduction	Reduction	Reduction	Reduction	Reduction
Long term effect on forage base for domesticated animals	Trend in range quality	Minor positive trend	Long term improvement	Long term improvement, 2 <sup>nd</sup> lowest rate	Long term improvement, 2 <sup>nd</sup> highest rate	Long term improvement, highest rate	Long term improvement, 2 <sup>nd</sup> lowest rate
Watershed	Trend in overall watershed function	Positive, smallest increase	Positive, 2 <sup>nd</sup> highest	Positive, 2 <sup>nd</sup> smallest	Positive, 2 <sup>nd</sup> highest	Very Positive, highest	Positive, 3 <sup>rd</sup> smallest
Wildlife – Mule Deer	Short and long term population trend	Short Term Low intensity, positive trend Long term Moderate intensity, negative trend	Short Term Low intensity, positive trend Long term High intensity, Postive trend	Short Term Low intensity, positive trend Long term High intensity, Postive trend	Short Term Low intensity, positive trend Long term Moderate intensity, Postive trend	Short Term Moderate intensity, positive trend Long term Moderate intensity, Postive trend	Short Term Low intensity, positive trend Long term Moderate intensity, Postive trend
Wildlife – Pronghorn	Short and long term population trend	Short Term Low intensity, positive trend Long term Moderate intensity, negative trend	Short Term Low intensity, positive trend Long term High intensity, Postive trend	Short Term Lowintensity, positive trend Long term High intensity, Postive trend	Short Term Low intensity, positive trend Long term High intensity, Postive trend	Short Term Moderate intensity, positive trend Long term Moderate intensity, Postive trend	Short Term Low intensity, positive trend Long term Moderate intensity, Postive trend

Table 2. Summary Comparisons of Resource Effects by Alternative (continued)

Environmental Component	Evaluation Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative J
Visuals – Short term significant adverse effects due to Mechanical and Fire restoration	Percentage of area in Retention or Preservation VQOs (USFS) or Class I and II VRMs (BLM) treated per decade	Negligible	“High” probability VQO Treatments 2.6% VRM Treatments 10.6%	“Moderate” probability VQO Treatments 2.0% VRM Treatments 8.5%	“High” probability VQO Treatments 2.5% VRM Treatments 10.6%	“High” probability VQO Treatments 3.1% VRM Treatments 12.8%	“Moderate” probability VQO Treatments 2.2% VRM Treatments 9.0%
Visuals – long term effect	Trend	Neutral	Neutral to Positive	Neutral to Positive	Neutral to Positive	Neutral to Positive	Neutral to Positive
Recreation – Short term effects	Comparison of intensity of shift from Semi-Primitive Motorized to Roaded Natural	Minor, temporary shift	Temporary shift of areas from Semi-Primitive Motorized to Roaded Natural	Temporary shift of areas from Semi-Primitive Motorized to Roaded Natural but lower intensity than Alternative B due to slower Restoration Rate	Temporary shift from Semi-Primitive Motorized to Roaded Natural, greater reduction in Semi-Primitive Motorized than Alts. B & C due to mechanical restoration	Temporary shift from Semi-Primitive Motorized to Roaded Natural, greater reduction in Semi-Primitive Motorized than Alts. B & C due to mechanical restoration.	Temporary shift from Semi-Primitive Motorized to Roaded Natural, greater reduction in Semi-Primitive Motorized than Alts. B & C due to mechanical restoration
Recreation – Long term effects	Improvement in Mule deer habitat could lead to increase in number of deer tags issued	“Moderate” Decline in Habitat	“High” Improvement in Habitat	“High” Improvement in Habitat	“Moderate” Improvement in Habitat	“Moderate” Improvement in Habitat	“Moderate” Improvement in Habitat